

19. A system for secure data transmission, comprising:

a processor;

a memory coupled to the processor;

5 a string generator stored in the memory and executable by the processor, the string generator adapted to generate a character string;

a hashing engine stored in the memory and executable by the processor, the hashing engine adapted to generate a hash key using the character string and a private key; and

10 an encryption engine stored in the memory and executable by the processor, the encryption engine adapted to encrypt the data using the hash key; and

wherein the processor is adapted to transmit the encrypted data, an identification key related to the private key, and the character string to a recipient.

15 20. The system of Claim 19, further comprising a signature engine stored in the memory and executable by the processor, the signature engine adapted to generate a signature using the hash key and the data, the processor further adapted to transmit the signature to the recipient.

20 21. The system of Claim 20, wherein the recipient is adapted to decrypt the encrypted data and verify the signature using the decrypted data.

22. The system of Claim 19, wherein the hashing engine is adapted to hash the character string with the private key to generate the hash key.

25 23. The system of Claim 19, wherein the string generator is adapted to randomly generate the character string.

30 24. The system of Claim 19, wherein the recipient is adapted to decrypt the encrypted data using the identification key and the character string.

25. The system of Claim 19, wherein the recipient is adapted to determine the hash key using the identification key and the character string and decrypt the encrypted data using the hash key.

5 26. The system of Claim 19, wherein the recipient is adapted to access a relational database associating the identification key with the private key and decrypt the encrypted data using the private key and the character string.

10 27. A system for secure data transmission, comprising:  
a processor adapted to receive encrypted data, an identification key, and a character string from a sender;  
a memory coupled to the processor;  
a relational database stored in the memory and accessible by the processor, the relational database relating the identification key to a private key; and  
15 a decryption engine stored in the memory and executable by the processor, the decryption engine adapted to decrypt the encrypted data using the character string and the private key.

20 28. The system of Claim 27, further comprising a hashing engine stored in the memory and executable by the processor, the hashing engine adapted to generate a hash key using the private key and the character string, the decryption engine adapted to decrypt the encrypted data using the hash key.

25 29. The system of Claim 27, further comprising a signature engine stored in the memory and executable by the processor, the signature engine adapted to verify a signature received from the sender using the private key and the character string.

30. The system of Claim 27, further comprising:

a hashing engine stored in the memory and executable by the processor, the hashing engine adapted to generate a hash key using the private key and the character string; and

5 a signature engine stored in the memory and executable by the processor, the signature engine adapted to verify a signature received from the sender using the hash key and the decrypted data.

10 31. The system of Claim 27, further comprising a hashing engine stored in the memory and executable by the processor, the hashing engine adapted to hash the character string with the private key to generate a hash key, the decryption engine adapted to decrypt the encrypted data using the hash key.

15 32. The system of Claim 27, further comprising a string generator stored in the memory and executable by the processor, the string generator adapted to generate a character string, and wherein the decryption engine is further adapted to encrypt data for transmitting to the sender using the character string and the private key.

20 33. The system of Claim 32, further comprising:

a string generator stored in the memory and executable by the processor, the string generator adapted to generate a character string

25 a hashing engine stored in the memory and executable by the processor, the hashing engine adapted to hash the character string with the private key to generate a hash key, and wherein the decryption engine is further adapted to encrypt data for transmitting to the sender using the hash key.

30 34. The system of Claim 32, further comprising a signature engine stored in the memory and executable by the processor, the signature engine adapted to generate a first signature using the decrypted data and compare the first signature to a second signature received from the sender.